

REMARKS

Careful consideration has been given to the Official Action of March 31, 2008 and reconsideration of the application as amended is respectfully requested.

Claim 14 stands rejected under 35 USC 112, first paragraph as allegedly failing to comply with the written description requirement.

Claims 1-3 and 6-16 stand rejected under 35 USC 103(a) as being allegedly being obvious over Kielbania (US 4,507,342) in view of Ikeda (US 4,292,392).

In response, claims 1, 6, and 14 have been amended to recite “printing a paste comprising a transparent printing developer onto select surfaces of the fabric to form a printed fabric with a printed pattern thereon without dyeing the fabric”. Support for this negative limitation can be found in paragraph [0012] of the specification as published which discloses dyeing and printing as alternatives. See MPEP 2173.05(i) (“If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims”). This limitation excludes from the claimed paste colorants, such as dyes or pigments, which would result in dyeing of the fabric and which as discussed below, is required in the paste of the primary reference.

Claims 1, 6, and 14 have also been amended to incorporate the contents of original claims 2, 7, and 15, respectively, and to recite that the transparent printing developer

accelerates the etching homogeneously (support can be found in the specification as published in paragraph [0009]).

Claim 14 has further been amended to recite “etching the printed fabric in a tank”, which is supported by paragraph [0022] of the specification as published (i.e. at lines 15-20 of that paragraph).

The claimed invention is patentable over Kielbania and Ikeda as will be discussed hereafter.

The present invention

To show the differences between the conventional treatment of fabrics and the claimed process, submitted herewith as an addendum is Fig. 1. Specifically, (a) shows a cross section of a fabric using the conventional techniques and (b) shows a cross section of a fabric using the claimed process.

The claimed invention is directed to a process of producing a synthetic fiber fabric having translucent patterns thereon, comprising:

(a) printing a paste comprising a transparent printing developer onto a surface of the synthetic fiber fabric (10), to form a printed fabric (14) with printed patterns (12) thereon without dyeing the fabric, wherein said transparent printing developer is a quaternary ammonium salt; and,

(b) after formation of the printed pattern, treating the printed fabric with an etching

agent, the transparent printing developer accelerating etching homogeneously, so as to form the fabric (18) having the translucent patterns (16) thereon.

As shown in the attached Fig. 1, the unetched fabric (10) has a thickness of h_1 , the etched fabric (10) has a thickness of h_2 , and a portion of the etched fabric (10) having the transparent patterns (16) thereon has a thickness of h_3 , wherein $h_1 > h_2 > h_3$. Obviously the fabric surfaces containing the transparent printing developer have a special etching effect and a difference in transperence as compared to the fabric surfaces that do not contain the transparent printing developer. That is, after the etching step, the fabric becomes thinner and is pervious to light, and a portion of the fabric having the transparent patterns thereon becomes much thinner, and thus the transparent patterns will be presented in the fabric due to a difference of transperence. Therefore, the fabric obtained from the process of the present invention has patterns with special translucent effects thereon. *The translucent patterns are formed on the fabric of the present invention and the translucency comes from the fabric per se because the patterned fabric is etched and thinner- (see Figure 1, the fabric (18)).* It is clear that the translucent patterns do not come from the translucent property of any chemical substances (for example, a cut clear of Kielbania discussed below, which functions as a viscosity builder). A piece of the synthetic fiber fabric produced by the process of the present invention will be submitted for the examiner's reference.

KIELBANIA (US 4,507,342)

In contrast, Kilbania relates to an article comprising a vinyl addition polymer of

monomers adherent to an untreated polyolefin substrate, wherein the polymer has surface energy properties such as to form a stable bond with the substrate. Therefore, the object of Kilbania is to have wash durability of an article. This is supported by the fact that in Kilbania, the printed fabric (Example 18b) has better wash durability than the control printed fabric (Example 18a). It is clear that the object and technical means of the claimed invention are completely different from those of Kilbania.

Specifically, Kielbania is directed to the technique regarding polymers adherent to polyolefins, and discloses an article comprising an untreated polyolefin substrate and adherent thereto, a blend of a first latex polymer and a vinyl addition latex polymer of monomers consisting essentially of at least 5% by weight of a primary monomer selected from three specific monomers. Kielbania is characterized by the use of the specific vinyl addition latex polymer, so that said adherent polymers have surface energy properties and form a stable bond with said substrate. It appears that Kielbania does not mention or suggest the process comprising the printing and etching steps to form a synthetic fiber fabric having translucent patterns thereon of the present invention.

The Examiner contends in the office action that Kielbania discloses a translucent pattern. Particularly, the Examiner points out that Kielbania teaches that a conventional printing paste is prepared from three major ingredients: pigment, thickener and binder. Before these ingredients are mixed to form a print paste, a "cut clear" is formed with a thickener. The cut clear is a translucent gel having a consistency over 100,000 cps. Although Kielbania teaches pigment in the printing paste, the Examiner contends that one of ordinary

skill cannot ignore a control print paste comprising 6% clear cut in example 18 of Kielbania.

Applicant respectfully submits that such a conclusion is ungrounded and incorrect.

In fact, according to example 18 of Kielbania, the cut clear is prepared by dissolving 6% by weight of a nonionic thickener in water and mixing for about 30 minutes to form a translucent gel having a consistency over 100,000 cps. The cut clear functions as a viscosity builder in the paste. That is to say, Kielbania discloses that a nonionic thickener is mixed with water to form a cut clear, and then the cut clear is mixed with pigments and binders to form the paste. *It follows that the cut clear is only a component of the paste and functions as a viscosity builder in the paste, rather than for accelerating the etching agent to form translucent patterns on the fabric as required by the claimed invention.*

Moreover, the examiner indicated in the office action that in example 18a, Kielbania teaches that a control print paste is prepared by mixing a cut clear containing the nonionic thickener, an aqueous pigment dispersion, water, an acrylic binder (a low energy heat curable quaternary ammonium salt vinyl monomer), and sodium bicarbonate as catalyst. The examiner also indicates that the quaternary ammonium units provide excellent dye pickup.

However, the claimed invention requires printing a paste comprising a transparent printing developer onto a surface of the fabric to form printed patterns thereon without dyeing (coloring) the fabric. Furthermore, in the present invention, the transparent printing developer (i.e., a quaternary ammonium salt) is printed on a selected surface of the fabric and

used to accelerate the etching with an etching agent and the formation of translucent patterns on the fabric. In contrast, Kielbania's paste includes pigments (colorings) as a major ingredient. Furthermore, Kielbania requires that the quaternary ammonium units provide excellent dye pickup. *Therefore, Kielbania does not teach or suggest printing a paste without dyeing the fabric; and the quaternary ammonium salt of the claimed invention is totally different from the quaternary ammonium salt vinyl monomer used in Kielbania and serves totally different functions.*

In addition, in the claimed invention, the printing step wherein a transparent printing developer is used and the etching step wherein an etching agent (i.e., sodium hydrogen carbonate) is used are different steps, and thus, quaternary ammonium salt and sodium hydrogen carbonate will not be mixed in the present invention. However, in the printing paste of example 18a of Kielbania, quaternary ammonium salt vinyl monomer and sodium bicarbonate are mixed in the printing paste. *Consequently, Kielbania does not teach or suggest the etching step of the present invention, and the sodium bicarbonate used in Kielbania is not used as an etching agent.*

Even if quaternary ammonium salt vinyl monomer and sodium bicarbonate of Kielbania are used in different steps like those of the claimed invention, Kielbania is still unable to obtain a fabric having translucent patterns thereon because the quaternary ammonium salt vinyl monomer disclosed in Kielbania cannot function as a transparent printing developer, which can accelerate the etching and the formation of translucent patterns on fabrics, wherein the transparence of the fabric printed with the transparent printing

developer is different from that of the fabric that is not printed with the transparent printing developer.

Given the above, Kielbania fails to disclose or suggest the synthetic fiber fabric having translucent patterns thereon. Consequently, Kielbania also fails to disclose or suggest (i) to perform a printing step prior to an etching step, the printing step comprising printing a paste free of dyes, pigments or colorings, and comprising a transparent printing developer (i.e., a quaternary ammonium salt) onto selected surfaces of the fabric, and (ii) to obtain the fabric having translucent patterns thereon.

Ikeda (US 4,292,392)

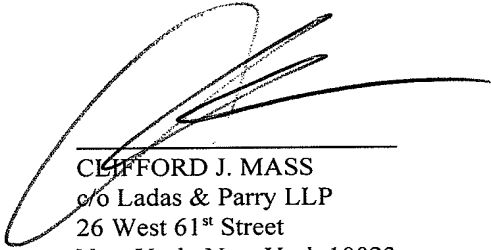
Ikeda relates to a method for producing a metal image. Although Ikeda discloses that sodium bicarbonate is a commonly known etching agent, Ikeda does not teach or suggest the process comprising the printing and etching steps to form a synthetic fiber fabric having translucent patterns thereon of the claimed invention and cannot make up for the deficiencies of Kielbania as discussed above.

Conclusion

As discussed above, Kielbania and Ikeda, taken alone or in combination, do not meet each and every feature of the claimed invention, and thus cannot establish even a *prima facie* case of obviousness.

In view of the above action and comments, it is respectfully submitted that the application as now presented is in condition for allowance and early notice thereof is earnestly solicited.

Respectfully submitted,

A large, stylized handwritten signature in black ink, consisting of several sweeping loops and a long horizontal stroke extending to the right.

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